

CLAIMS:

1. A method of producing a composite sheet, comprising:
a step of preparing a first ceramic sheet from a ceramic
5 powder, and a different kind of sheet made of a material
different from that of the first ceramic sheet, both of said
sheets having substantially the same thickness;
a step of forming a through hole in a predetermined portion
of said first ceramic sheet;
10 a step of laminating said different kind of sheet on said
first ceramic sheet in which said through hole is formed; and
a step of preparing a composite sheet by pressing the
portion of said first ceramic sheet where the through hole is
formed from the side of said different kind of sheet, such that
15 a portion of said different kind of sheet is buried in the through
hole in a manner that said first ceramic sheet and said different
kind of sheet are integrated together.
2. A method of producing a composite sheet according to claim
20 1, wherein said different kind of sheet is a burn-and-extinguish
sheet made of a material that extinguishes by burning through
the heat treatment.
3. A method of producing a composite sheet according to claim
25 2, wherein said burn-and-extinguish sheet contains resin beads
having an average particle size of 1 to 20 μm .
4. A method of producing a composite sheet according to claim
2, wherein said burn-and-extinguish sheet is a carbon sheet made
30 from a carbon powder.
5. A method of producing a composite sheet according to claim
1, wherein said different kind of sheet is a metal sheet made
from a metal powder.
- 35 6. A method of producing a composite sheet according to claim

5, wherein the metal powder in said metal sheet contains a low-melting metal powder in an amount of 10 to 60% by volume and a high-melting metal powder in an amount of 40 to 90% by volume.

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7. A method of producing a composite sheet according to claim 1, wherein said different kind of sheet is a second ceramic sheet formed from a ceramic powder different from that of the first ceramic sheet.

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8. A method of producing a composite sheet according to claim 7, wherein a conductor is printed on the surface of said second ceramic sheet.

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9. A method of producing a composite sheet according to claim 1, wherein a conductor is printed on the surface of said first ceramic sheet.

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10. A method of producing a composite sheet according to claim 1, wherein said first ceramic sheet is made of a ceramic material that can be fired at a temperature in excess of 1100°C.

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11. A method of producing a composite sheet according to claim 1, wherein said first ceramic sheet is made of a ceramic material that can be fired at a low temperature of not higher than 1050°C.

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12. A method of producing a composite sheet according to claim 1, further comprising a step of swelling at least one of the first ceramic sheet or the different kind of sheet at a boundary portion thereof, and a step of pressing the composite sheet that has been swollen in the direction of thickness.

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13. A method of producing a composite sheet according to claim 1, further comprising a step of applying a paste onto the boundary portion between the first ceramic sheet and the different kind of sheet to form a coating layer on said portion.

14. A method of producing a composite sheet comprising:
a step of preparing a first ceramic sheet and a different kind of sheet made of a material different from the first ceramic sheet, both of the sheets having substantially the same
5 thickness;
a step of laminating said first ceramic sheet and said different kind of sheet one upon the other; and
a step of preparing a composite sheet by pressing a predetermined portion of the laminate from the side of said
10 different kind of sheet, such that the pressed portion of said different kind of sheet is transferred onto the side of said first ceramic sheet to integrate said first ceramic sheet and said different kind of sheet together.
- 15 15. A method of producing a composite sheet according to claim 14, wherein said different kind of sheet is a burn-and-extinguish sheet made of a material that extinguishes by burning through the heat treatment.
- 20 16. A method of producing a composite sheet according to claim 15, wherein said burn-and-extinguish sheet contains resin beads having an average particle size of 1 to 20 μm .
- 25 17. A method of producing a composite sheet according to claim 15, wherein said burn-and-extinguish sheet is a carbon sheet made from a carbon powder.
- 30 18. A method of producing a composite sheet according to claim 14, wherein said different kind of sheet is a metal sheet made from a metal powder.
- 35 19. A method of producing a composite sheet according to claim 18, wherein the metal powder in said metal sheet contains a low-melting metal powder in an amount of 10 to 60% by volume and a high-melting metal powder in an amount of 40 to 90% by volume.

20. A method of producing a composite sheet according to claim 14, wherein said different kind of sheet is a second ceramic sheet formed from a ceramic powder different from that of the first ceramic sheet.

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21. A method of producing a composite sheet according to claim 20, wherein a conductor is printed on the surface of said second ceramic sheet.

10 22. A method of producing a composite sheet according to claim 14, wherein a conductor is printed on the surface of said first ceramic sheet.

15 23. A method of producing a composite sheet according to claim 14, wherein said first ceramic sheet is made of a ceramic material that can be fired at a temperature in excess of 1100°C.

20 24. A method of producing a composite sheet according to claim 14, wherein said first ceramic sheet is made of a ceramic material that can be fired at a low temperature of not higher than 1050°C.

25 25. A method of producing a composite sheet according to claim 14, further comprising a step of swelling at least one of the first ceramic sheet or the different kind of sheet at a boundary portion thereof, and a step of pressing the composite sheet that has been swollen in the direction of thickness.

30 26. A method of producing a composite sheet according to claim 14, further comprising a step of applying a paste onto the boundary portion between the first ceramic sheet and the different kind of sheet to form a coating layer on said portion.

35 27. A method of producing a laminate by using a composite sheet, comprising a step of producing a laminate by laminating a first ceramic sheet or other composite sheet on the composite sheet

produced by the method according to any one of claims 1 to 26.

28. A method of producing a laminate according to claim 27,
wherein said different kind of sheet is a burn-and-extinguish
5 sheet made of a material that extinguishes by burning through
the heat treatment, and a cavity is formed by burning and
extinguishing the burn-and-extinguish sheet through firing.

29. A method of producing a laminate according to claim 27,
10 further comprising a step of firing said laminate.

30. A method of producing a laminate according to claim 27,
wherein said laminate forms a multi-layer circuit board.

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